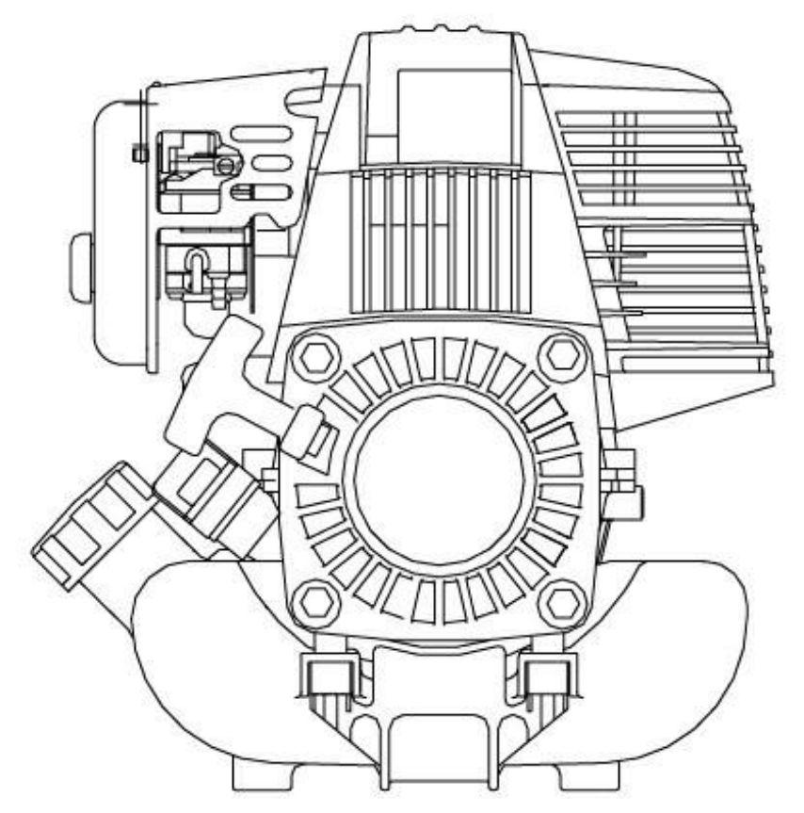
SM-139F-01B

139F GASOLINE ENGINE
INSTRUCTION MANUAL

MODEL：139FA



Thank you for purchasing our engine.

This manual covers the operation and maintenance of your engine.

All information in this publication is base on the latest product information available at the time of printing.

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This manual should be considered a permanent part of the engine and should remain with it if it is resold.

Pay special attention to statements preceded by the following words:

WARNING! Indicates a strong possibility of severe personal injury or death if instructions are not followed.

CAUTION! Indicates a possibility of personal injury or equipment damage if instructions are not followed.

NOTICE! Indicates that equipment or property damage can result if instructions are not followed.

WARNING!

- **This engine is designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's manual before operating the engine. Failure to do so could result in personal injury or equipment damage.**
- **Muffler's exhaust outlet can't point to the operator.**

Ⅰ. FOREWORD

This engine is single-cylinder, four-stroke, air-cooled, small-size and light-weighted gasoline engine, its construction is simple , operation and maintenance is easy.

The engine can be used as the power for brush cutter, water-pump, electrical machine, mini-cultivator etc.

Ⅱ.SAFETY INSTRUCTIONS

This engine is designed to give safe and dependable service if operated according to instructions. Read and understand the Owner's manual before operating the engine. Failure to do so could result in personal injury or equipment damage.

WARNING! To ensure safe operation-

Don't start the engine without mounting it on an equitpment. It is designed to give safe and dependable service only when it is mounted on an equipment. Before operating the engine, read

- and understand the Owner's Manual furnished with the equipment along with this Owner's Manual.
- Always make a pre-operation inspection (page 5) before you start the engine. You may prevent an accident or equipment damage.
- To prevent fire hazards and to provide adequate ventilation, keep the engine at least 1 meter(3 feet) away from buildings and other equipment during operation. Don't place flammable objects close to the engine.

- Children and pets must be kept away from the area of operation due to a possibility of burns from hot engine components or injury from any equipment the engine may be used to operate.
- Know how to stop the engine quickly, and understand the operation of all controls. Never permit any one operate the engine without proper instructions.
- Don't place flammable objects such as gasoline, matches, etc., close the engine while it is running.
- Refuel in a well-ventilate area with the engine stopped. Gasoline is highly flammable and expensive under certain conditions.
- Don't overfill the fuel tank. There should be no fuel in the filler neck. Make sure that the filler cap is closed securely.
- If any fuel is spilled, clean it up completely and allow petroleum vapours to dissepate before starting the engine.
- Don't smoke and allow flames or sparks where the engine is refueled or where gasoline is stored.
- Exhaust gas contains poisonous carbon monoxide. Avoid inhalation of exhaust gases. Never run the engine in a closed garage or confined area.
- Don't place any thing on the engine, as it may create a fire hazard.
- This type engine, a spark arrester is available as an optional part. It is illegal in some areas to operate an engine without a spark arrester. Check local laws and regulations before operations.
- The muffler becomes very hot during operation and remains hot for a while after stopping the engine. Be careful not to touch the muffler while it is hot. To avoid server burns or fire hazards, let the engine cool before transporting it or storing it indoors.

SAFETY INSTRUCTION LOCATION

This instruction warns you of potential hazards that can cause serious injury. Read it carefully.

Ⅲ.TECHNICAL DATA

Model	139F
Type	4-stroke, over head valve, 1 cylinder
Displacement	31cm ^{3}
Bore×Stroke	39×26mm
Max .output	0.7kW /6500r/min
Max. rotation with no load	10,000rpm
Fuel consumption	480g/kW・h
Cooling system	Forced air
Ignition system	Transistor magneto
Length×Width×Height	254×220×260mm (10×8.6×10.2in)
Net weight	4.3kg (9.2 lbs)
PTO shaft rotation	Counter clockwise

Ⅳ. PREPARATION

1. Engine oil level

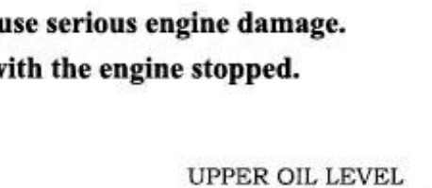
CAUTION!

- **Running the engine with insufficient oil can cause serious engine damage.**
- **Be sure to check the engine on a level surface with the engine stopped.**

a. Place the engine with the fuel tank side downward and horizontally on a level surface.

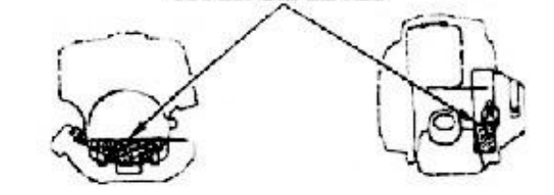
b. Remove the oil filer cap and check the oil level: it should reach the top of the oil filler neck.

c. If the level is low,fill to the top of the oil filler neck with the recommended oil.

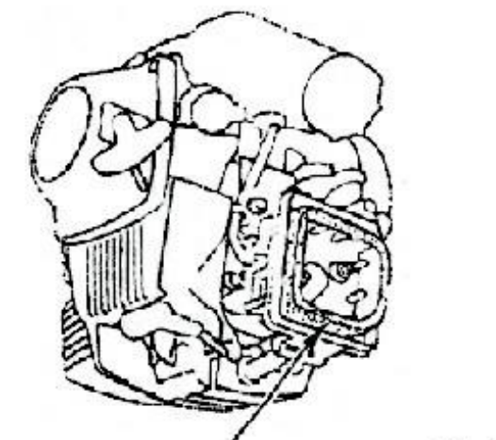


Every 10 hours, check the engine oil level and replenish oil up to the top of the filler neck if the engine is operated for more than 10 hours continuously.

Use an high detergent, premium quality motor oil



certified to meet or exceed U. S . automobile manufacture's requirement for service classification SG. SF.Motor oils classified SG, SF will show this designation on the container. SAE 10W –30 is recommended for general, all temperature use .



CAUTION!

Using nondetergent oil or 2-stroke engine oil could shorten the engine's life.

2. Air cleaner

CAUTION!

Never run the engine without the air cleaner. Rapid engine wear will result.

Check cleaner for dirt or obstruction of element.

3. Fuel

Use automotive gasoline (unleaded or lowleaded is preferred to minimize combustion chamber deposits).

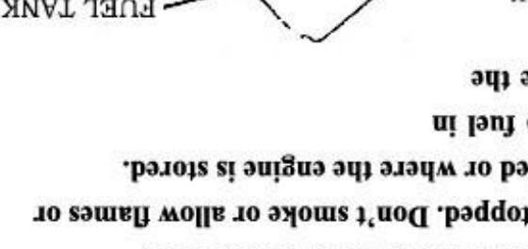
Never use an oil/gasoline mixture or dirty gasoline. Avoid getting dirt , dust or water in the fuel tank .

WARNING!

- **Gasoline is extremely flammable and is explosive under certain conditions.**

Refuel in a well-ventilated area with the engine stopped. Don't smoke or allow flames or

- **sparks in the area where the engine is refueled or where the engine is stored.**
- **Don't overfill the tank (there should be no fuel in the filler neck). After refueling , make sure the tank cap is closed properly and securely.**
- **Be careful not to spill fuel when refueling. Spilled fuel or fuel vapor may ignite. If any fuel is spilled, make sure the area is dry before starting the engine.**
- **Avoid repeated or prolonged contact with skin or breathing of vapor.**



KEEP OUT OF REACH OF CHILDREN.

Fuel tank capacity:0.9 l (0.238 US gal)

GASOLINE CONTAINING ALCOHOL

If you decide to use a gasoline containing alcohol (gasohol), besure it's octane rating is high. There two types of "gasohol", one containing methanol, and the other containing methanol. Don't use gaoline containing methanol (methyl or wood alcohol) that does not also contain cosolvenrs and corosion inhibitors for methanol. Never use gasoline containg more than 5% methanol, even if it has cosolvents and corrosion inhibitors.

CAUTION!

- **Fuel system damage or engine performance problems resulting from the use of fuels that contain alcohol is not covered under the warranty . we can't endorse the use of fuels containing methanol since evidence of their suitability is as yet incomplete.**
- **Before buying fuel from an unfamiliar station, try to fine out if the fuel contains alcohol, if it does, confirm the type and percentage of alcohol used. If you notice any undesirable operating symptoms while using a gasoline that contains alcohol, or one that you think contains alcohol, switch to a gasoline that you know does not contain alcohol.**

4. Retightening bolts and nuts

Check for loose bolts and nuts. Tighten the bolts and nuts properly and securely, if necessary .

Ⅴ.STARTING THE ENGINE

1. Turn the engine switch to ON position (on the equipment side).
2. Move the choke lever to the "OFF" position .

CAUTION!

Don't use the choke if the engine is warm or the air temperature is high .

3. Press the priming pump several times until a fuel flow in the fuel return tube is visually noticed.
4. Pull the starter grip lightly until resistance is felt, then pull briskly.

CAUTION!

Don't allow the starter grip briskly. If not pulled briskly, sparks may fail to jump across the spark plug electrodes, resulting in failure to start the engine.

- **High altitude operation**

At high altitude, the standard carburetor air-fuel mixture will be excessively rich. Performance will decrease, and fuel consumption will increase.

High altitude performance can be improved by installing a smaller diameter main fuel jet in the carburetor, and readjusting the idle needle screw and the idle adjust screw. If you always operate the engine at altitudes higher than 1,860m (6000feet)above sea level, have your authorized dealer perform these carburetor modifications .

Even with suitable carburetor jetting, engine horsepower will decrease approximately 3.5% for each 305m (1,000 feet) increase in altitude. The affect of altitude on horsepower will be greater than this if no carburetor modification is made.

CAUTION!

Operation of the engine at an altitude lower than the carburetor is jetting for may result in reduced performance, overheating, and serious engine damage cause by an excessively lean air/fuel mixture.

Ⅵ. OPERATION

1. Gradually move the choke lever to the "ON" position. Warm up the engine until it run smoothly.
2. Position the throttle control lever for the desired engine speed (on the equipment side).

Ⅶ.STOPPING THE ENGINE

To stop the engine in an emergency, turn the engine switch to the OFF position (on the equipment side). Under normal conditions, use the following procedure:

1. Position the throttle lever fully to LOW (on the equipment equipment side).
2. turn the engine switch to the OFF position (on the equipment side).

Ⅷ. MAINTENANCE

Periodic inspection and adjustment of the engine is essential if high lever performance is to be maintained. Regular maintenance will also ensure a long service life. The required service intervals and the kind of maintenance to be performed are described on the table below.

Maintenance Schedule

	Each use	First month or operating 10 hours	Every 3 month or operating 25 hours	Every 5 month or operating 50 hours	Every year or operating 100 hours
Engine oil	Check	Change		Change	
Air cleaner	Check		Clean *		
All bolts and nuts	Re-tighten if necessary				
Engine cooling fins				Check	
Spark plug				Clean-adjust	
Spark arrester					Clean
Valve clearance	Every 2 year or 200 hours#				
Clutch shoes				Check#	
Fuel tank strainer					Check
Fuel tank					Clean
Fuel line	Every 2 year#				

*. Service more frequently used in dirty area.

#. these items should be serviced by an authorized dealer, unless the owner has the proper tools and is mechanically proficient.

WARNING!

- **Shut off the engine before performance.**
- **To prevent accidental start-up, turn OFF the engine switch and disconnect the spark plug cap.**
- **The engine should be serviced by an authorized dealer unless the owner has proper tools and service data and feels he is mechanically qualified.**

CAUTION!

Use only genuine parts or their equipment. The use of replacement parts which are not equivalent quality may damage the engine.

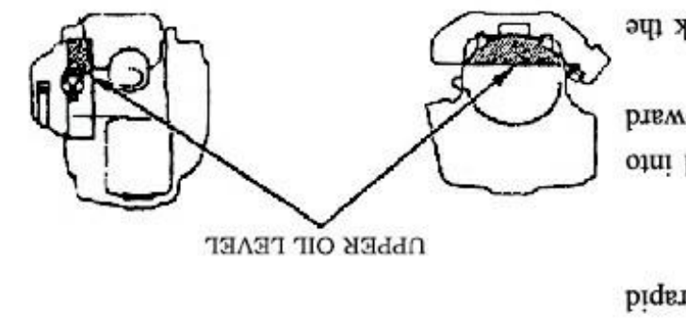
1. Oil change

Drain the oil while the engine is still warm to assure rapid and complete drain .

a. Check the fuel filler cap is tightened.

b. Remove the oil filler cap and drain the oil into the oil container by inclining the engine toward the oil filler neck.

c. Refill with the recommended oil and check the oil lever.



Engine oil capacity: 0.10l (0.11 US qt , 0.09 lmp qt)

Wash your hands with soap and water after handing used oil.

CAUTION!

Please dispose of used motor oil in a manner that is compatible with the environment, we suggest you take it in a sealed container to your local service station for reclamation. Don't throw it in the trash or pour it on the ground.

2. Air cleaner service

A dirty Air cleaner will restrict air flow to the carburetor. To prevent carburetor malfunction, service the air cleaner regularly. Service more frequently when operating the engine in extremely dusty areas.

WARNING!

Never use gasoline or low flash point solvents for cleaning the air cleaner element. A fire or explosion could result.

CAUTION!

Never run the engine without the air cleaner. Rapid engine wear will result.

a. Move the choke lever to the CLOSED (upward) position.

b. Remove the air cleaner cover by unhooking the upper tab on the top of the air cleaner cover and its two lower tabs.

c. Wash the element in a nonflammable or high flash point solvent and dry it thoroughly.

d. Soak the element in clean engine oil and squeeze out the excess oil.

e. Reinstall the air cleaner element.

f. Reinstall the air cleaner cover by inserting the lower tabs, then insert the upper tab.

3. Spark plug service

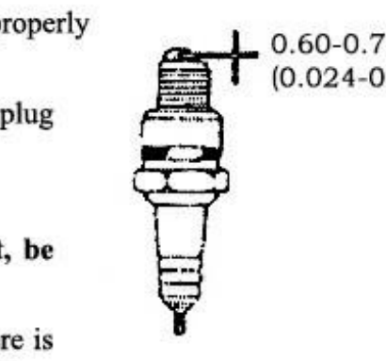
Recommended spark plug: C5HSB CR5HSB (NGK)

CAUTION!

Never use a spark plug of incorrect heat range.

To ensure proper engine operation, the spark plug must be properly gapped and free of deposits.

a. Remove the spark plug cap and use the proper size spark plug wrench to remove the spark plug.



WARNING!

If the engine has been running, the muffler will be very hot, be careful not to touch the muffler.

b. Visually inspect the spark plug. Discard the spark plug if there is apparent wear, or if the insulator is cracked or chipped. Clean the spark plug with a wire brush if it is to be reused.

c. Measure the spark plug gap with a feeler gauge. Correct as necessary by bending the side electrode.

The gap should be :0.60~0.70mm (0.024~0.028in)

d. Check the spark plug washer is in good condition and thread the spark plug in by hand to prevent cross-threading.

e. After the spark plug is seated, tighten with a spark plug wrench to compress the washer.

CAUTION!

When installing a new spark plug, tighten with 1/2 turn after the spark plug seats to compress the washer. When reinstalling a used spark plug, tighten 1/8~1/4 turn after the spark plug seats to compress the washer.

CAUTION!

The spark plug must be securely tightened. An improperly tighten spark plug can become very hot and may be damage the engine.

4. Fuel filler service

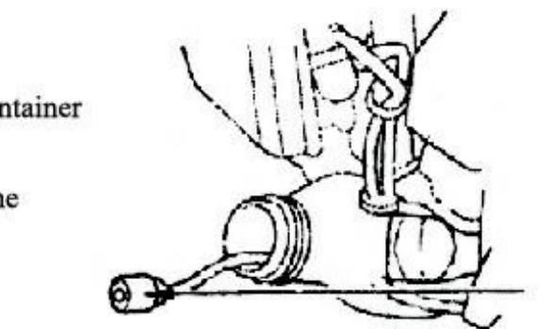
WARNING!

Gasoline is extremely flammable and is explosive under certain conditions. Don't smoke or allow flames or sparks in the area.

a. Check the engine oil filler cap is tightened securely.

b. Remove the fuel filler cap and drain the fuel into the container by inclining the engine toward the fuel filler neck.

c. Pull out the fuel filler with the mechanic's wire from the fuel filler neck gently.



d. Check the fuel filler of its dirt. If the fuel filler is dirty, wash it gently with nonflammable or high flash point solvent. If the fuel filler is excessively dirty, replace it.

e. Return the fuel filler into the fuel tank and the fuel filler cap securely.

5 . Fuel tank cleaning

WARNING!

Gasoline is extremely flammable and is explosive under certain conditions. Don't smoke or allow flames or sparks in the area.

a. Check the engine oil filler cap is tightened securely.

b. Remove the fuel filler cap and drain the fuel into the container by inclining the engine toward the fuel filler neck.

c. Pull out the fuel filler with the mechanic's wire from the fuel filler neck gently.

d. Remove water and dirt stood in the fuel tank by rinsing the inside of the fuel tank with nonflammable or high flash point solvent.

e. Return the fuel filler into the fuel tank and the fuel filler cap securely.

6. Cooling fin service

Inspect the cooling fin visually through the cover. If there are dry grass, leaves and mud clogged, contact the power equipment dealer for cleaning it.

Ⅸ.TRANSPORTING AND STORAGE

WARNING!

When transporting the engine, tighten the fuel filler cap to prevent fuel spillage. Fuel vapor or spilling fuel may ignite.

Before storing the unit for an extended period:

a. Be sure the storage area is free of excessive humidity and dust.

b. Drain the fuel…

WARNING!

Gasoline is extremely flammable and is explosive under certain conditions. Don't smoke or allow flames or sparks in the area.

a. Check the engine oil filler cap is tightened securely.

b. Remove the fuel filler cap and drain the fuel into the container by inclining the engine toward the fuel filler neck.

c. Press the priming pump several time until all fuel left in the fuel return tube is returned into the fuel tank.

d. Tilt the engine toward the fuel filler neck again to drain the fuel left in the fuel tank into the container.

e. Tighten the fuel filler cap securely after draining the fuel completely.

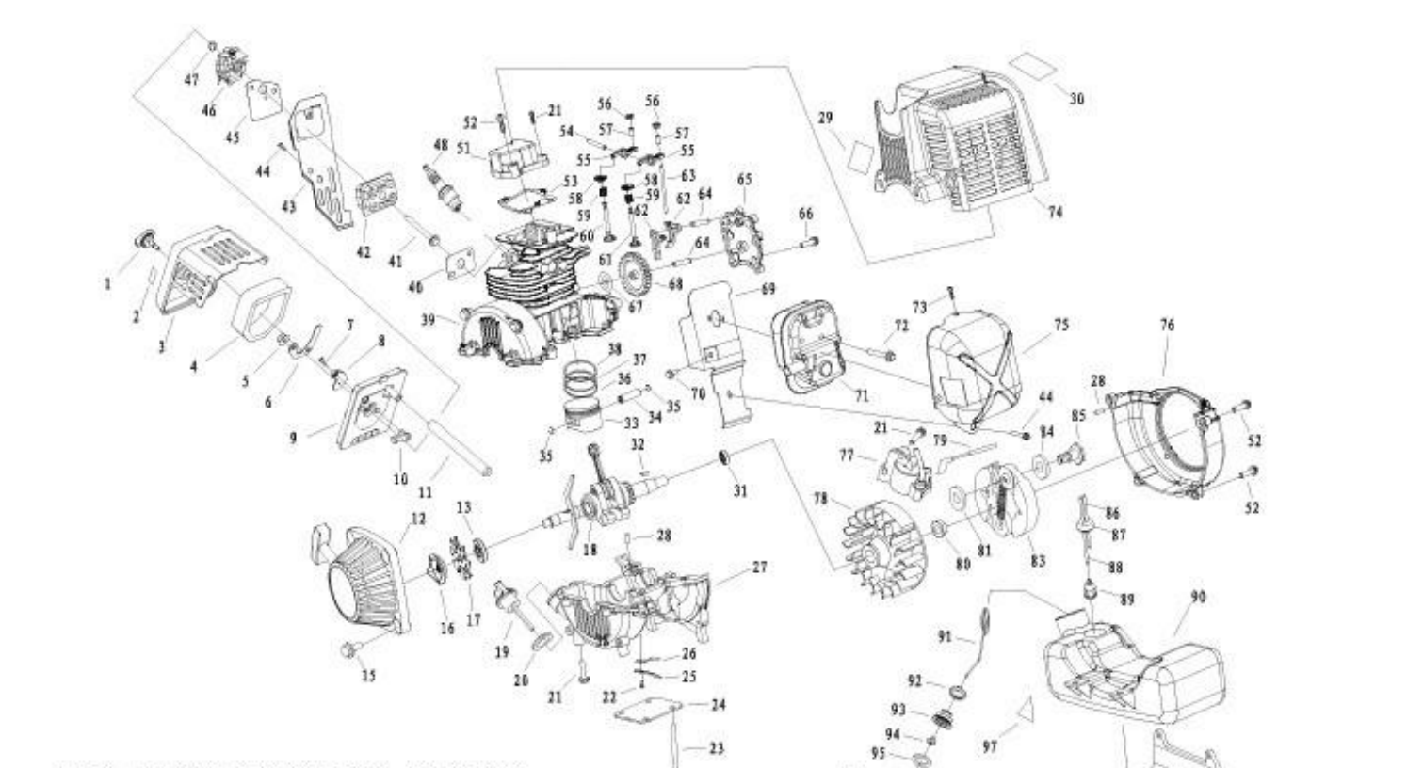


FIG:139F GASOLINE ENGINE

NO.	Part NO.	Part Name	Qty.	NO.	Part NO.	Part Name	Qty.	NO.	Part NO.	Part Name	Qty.
1	1E34F. 1. 2	Screw	1	35	1E31F. 4-3	Ring	2	70	GB/T9074. 5	Screw M5×8	1
2	1E40F-3A. 3-5	Sign	1	36	139F. 9. 3	Oil ring	1	71	139F. 4	Muffle	1
3	139F. 2. 1-2	Outside Cover	1	37	139F. 9-5	Second Piston Ring	1	72	GB/T9074. 13	Screw M5×50	2
4	139F. 2. 1-1	Filter Net	1	38	139F. 9-4	First Piston Ring	1	73	GB/T9074. 6	Screw M5×16	1
5	GB/T6177. 1	Nut M5	2	39	139F. 7. 1	Cylinder	1	74	139F. 3	Cylinder Cover	1
6	139F. 2. 1. 1-3	baffler	1	40	139F. 2-3	Admitting Gasket	1	75	139F-1	Muffle Cover	1
7	GB/T845	Screw ST4. 2×12-F-H	1	41	GB5780	Screw M5×75	2	76	139F-3	Fly Wheel Cover	1
8	139F. 2. 1. 1-2	Choke	1	42	139F. 2-2	Admitting Pipe	1	77		Coil	1
9	139F. 2. 1. 1. 1	Inside Cover	1	43	139F-6	Board	1	78		Fly Wheel	1
10	139F. 2. 1. 1-1	Choke Handle	1	44	GB/T9074. 5	Screw M5×8	4	79	139F. 5. 1	Parking	1
11	139F. 2-4	Windpipe	1	45	139F. 2-1	Gasket	1	80	GB/T6177. 2	Nut M10×1. 25	1
12	139F. 10A	Starter	1	46	139F. 2. 2	Carburetor	1	81	1E36F-3	Gasket	2
13	139F. 8	Seal	1	47	GB2452. 1	O Ring 5×2. 65	1	83	1E40F-5. 6A	Expander	1
15	GB/T9074. 13	Screw M5×20	10	48	A5RTC	Spark Plug	1	84	1E40F-5-11	Washer	2
16	139F. 9-2A	Start Reel	1	51	139F. 11	Cylinder Cover	1	85	1E40F-5-12	Screw Pin	2
17	139F. 9-1	Fan	1	52	GB/T9074. 13	Screw M5×25	6	86		Fuel Pipe	1
18	139F. 9. 1	Grank Shaft	1	53	139F-5	Cylinder Cover Gasket	1	87	1E36FF. 8. 1-1	Plug	1
19	142F-9	Dipstick	1	54	139F. 7-8	Rocker Pin	1	88		Fuel Pipe	1
20	142F-10	Seal	1	55	139F. 7-7	Rocker	2	89	1E34F. 9. 2-3B	Cleaner	1
21	GB/T9074. 13	Screw M5×16	7	56	139F. 7-5	Adjust Nut	2	90	139F. 1-1	Fuel Tank	1
22	GB/T9074. 4	Screw M3X8	1	57	139F. 7-6	Jib Seat	2	91	1E32FL. 6. 2-4	Chain	1
23	GB/T9074. 13	Screw M5×55	4	58	142F. 9-2	Spring Seat	2	92	1E32FL. 6. 2-3	End Cover	1
24	139F-4	Board	1	59	139F. 7-10	Spring	2	93	1E32FL. 6. 2-2	Inside Cover	1
25	139F. 7-18	Board	1	60	139F. 7-12	Input Valve	1	94	EB-415. 4. 1. 1-1	Inlet	1
26	139F. 7-19	Reed	1	61	139F. 7-11	Output Valve	1	95	CG420. 1. 3. 1-2	Gasket	1
27	139F. 7-16	Grank Case	1	62	139F. 7-3	Below Rocker	2	96	139F. 1. 1-1	Fuel Tank Lid	1
28	GB119. 1	Pin B4×8	3	63	139F. 7-4	Jib	2	97	3WF-8-7	Fire Sign	1
29	139F-9A	Oil Sign	1	64	139F. 7-2	Pin	2	98	139F-10	Fuel Tank Nog	1
30	EB-650-9	Sign	1	65	139F. 7-1	Cover	1				
31	139F. 6	Seal	1	66	GB/T9074. 4	Screw M4×16	5				
32	GB1099	Key 3×5×13	1	67	139F. 7-21	Board	1				
33	139F. 9. 2	Piston	1	68	139F. 7-22	Cam Wheel	1				
34	139F. 9-5	Piston Pin	1	69	139F. 12	Board	1				